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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,590	08/27/2003	Ole Henrik Waagaard	WEAT/0493	4986
36735	7590	05/10/2005		
MOSER, PATTERSON & SHERIDAN, L.L.P. 3040 POST OAK BOULEVARD, SUITE 1500 HOUSTON, TX 77056-6582				
			EXAMINER ROJAS, OMAR R	
			ART UNIT 2874	PAPER NUMBER

DATE MAILED: 05/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/649,590

Applicant(s)

WAAGAARD ET AL. 

Examiner

Omar Rojas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2005.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-3, 8-10 and 15-16 is/are rejected.  
7) ☒ Claim(s) 4-7 and 11-14 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on August 27, 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 0205.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☒ Other: Detailed Action.

## DETAILED ACTION

### *Information Disclosure Statement*

1. The prior art documents submitted by applicant in the Information Disclosure Statement(s) filed on February 10, 2005 have all been considered and made of record (note the attached copy of form(s) PTO-1449).

### *Specification*

2. It is requested that the missing application serial numbers in paragraph [0001] be provided.

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### *Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

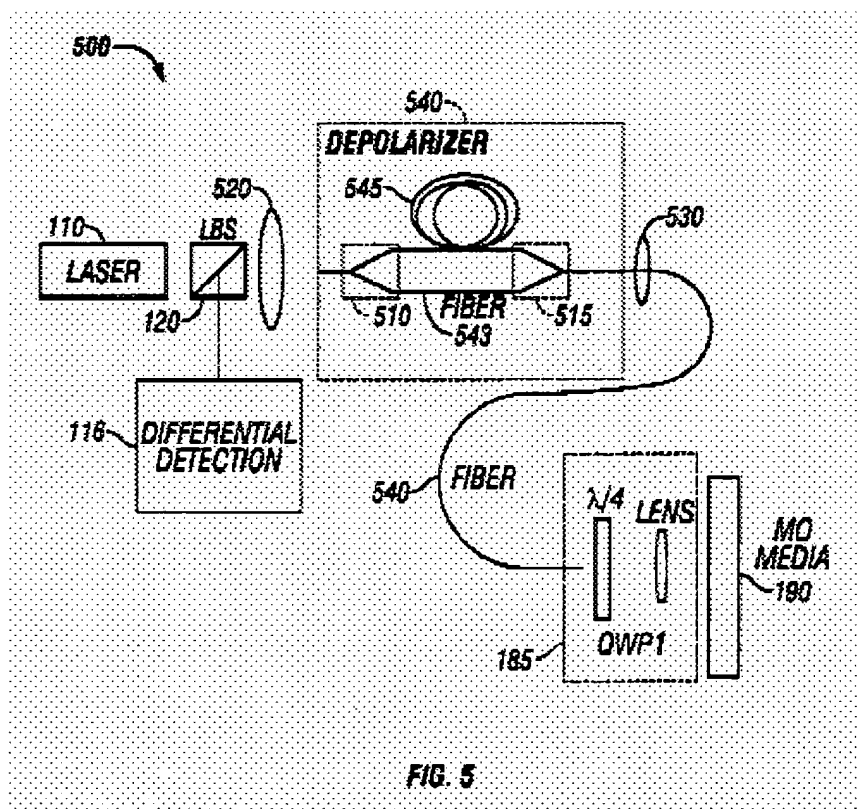
5. **Claims 1-3, 8-10, and 15-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Patent No. 6,574,015 to Tselikov et al. (hereinafter "Tselikov"), provided by applicant(s) in the Information Disclosure Statement.**

Regarding claim 1, Tselikov discloses an apparatus for depolarizing light comprising:

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a beam splitter **510** having an input and two outputs, where a light beam from a first output has a polarization that is orthogonal to a polarization of a light beam from a second output; and

a beam combiner **515** having a first input coupled to the first output of the beam splitter via a first fiber **543**, a second input coupled to the second output of the beam splitter via a second fiber **545**, and an output that produces depolarized light, where the first and second fibers are polarization maintaining fibers and the second fiber **545** has a length that provides a predefined delay with respect to the first fiber such that a parasitic interference signal having a delay equal to the predefined delay will be suppressed during a demodulation process (see column 5, lines 52-67 and column 7, lines 13-42). Figure 5 of Tselikov is reproduced below.



Regarding claim 2, a source is coupled to beam splitter **510** to provide light thereto.

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Regarding claim 3, as seen in Fig. 1, Tselikov further teaches that a polarization controller **130** may be provided between a light source **110** and the beam splitter for equalizing signal power levels.

Regarding claims 8-10 and 15-16, see the previous remarks.

***Allowable Subject Matter***

6. Claims 4-7 and 11-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 4-5 and 11-12, it is the position of this examiner that it would not have been obvious to modify Tselikov to use a light source having a coherence length that is less than a length of an interrogation pulse that is formed using the depolarized light.

Regarding claims 6-7 and 13-14, it is the position of this examiner that it would not have been obvious to modify Tselikov use a light source having a frequency swept output and the predefined delay is selected to ensure that a cross-correlation between orthogonal polarizations of the source do not appear in extracted signal frequencies within a receiver.

The aforementioned limitations appear to have special significance for use in time division multiplexing ("TDM") and frequency division multiplexing ("FDM").

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Patent No. 6,195,162 discloses an interferometric sensor comprising a depolarizer and having reduced polarization fading. Patent No. 6,278,657 discloses an interferometric sensor

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comprising a depolarizer that is useful for TDM and FDM applications. Patent No. 5,430,795 discloses a depolarizer similar to the one disclosed by Tselikov.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar Rojas whose telephone number is (571) 272-2357. The examiner can normally be reached on Monday-Friday (7:00AM-3:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick, can be reached on (571) 272-2344. The official facsimile number for regular and After Final communications is (703) 872-9306. The examiner's RightFAX number is (571) 273-2357.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Omar Rojas  
Patent Examiner  
Art Unit 2874

or  
May 2, 2005